

REMARKS

Reconsideration of this application is requested.

A minor typing error has been corrected in claim 3 by inserting a comma between "-F" and "-OR⁴ⁿ" in the R² definition.

The claims pending for consideration are prior claims 1-9 and new claims 10-14. Of the new claims, claims 10 and 12 combine the features of claims 5 and 6 and claims 5 and 9, respectively, while claims 11, 13 and 14 are drawn to the features of claims 7, 6 and 7, respectively, with different dependence.

The applicants respectfully submit that claims 1-9 and new claims 10-14 define novel and patentable subject matter and should be allowable. Accordingly, the Examiner is respectfully requested to reconsider the Section 102(b) rejection of claims 1-9 as anticipated by WO 98/15581 (hereinafter "WO 581"). The applicants respectfully submit that WO 581 does not disclose the applicants' invention.

As indicated by claim 1, the applicants' process, in its broadest application, is directed to the purification of an oligonucleotide synthon by subjecting an organic solution comprising the synthon and lower molecular weight impurities to nanofiltration so that the ratio of synthon to lower molecular weight impurities in the solution is increased.

WO 581 suggests (page 4, lines 9-13) that either reverse osmosis or nanofiltration can be employed for the purification of nucleotides, nucleosides and nucleoside sugars. None of these listed compounds are oligonucleotide synthons as required by the applicants'. Neither is the nucleoside phosphates listed on page 22 of WO 581. Furthermore, the processes taught by WO 581 refer to the separation of compounds using aqueous solutions. There is no disclosure of the use of an organic solution as required by the claims of the present application. Accordingly, the applicants' submit that their claims are novel over WO 581. Withdrawal of the Section 102(b) rejection is, therefore, requested.

It is also noted that the applicants' invention is not in any sense obvious from WO 581 as the Examiner has evidently already recognized. Briefly stated, WO 581 provides no teaching that would cause the skilled person to contemplate the process of the present invention. The teaching of WO 581 is confined to substances which do not comprise the highly reactive functional groups present in oligonucleotide synthons. There is nothing in WO 581 to cause the skilled person to contemplate the use of nanofiltration membranes for the purification of such reactive species. Further, WO 581 contains no teaching that would motivate one of ordinary skill in the

art to contemplate the purification of the organic systems of the present invention. The teaching of WO 581 is confined solely to aqueous systems. At page 4, line 11, WO 581 equates nanofiltration with reverse osmosis, reverse osmosis being a technique applicable to aqueous systems. At page 9, WO 581 teaches the importance of controlling the pH of the solution employed to achieve the desired separations. However, pH is not a matter which is controllable for the organic systems of the present invention. There is nothing in WO 581 that would cause the skilled person to contemplate applying the teaching of WO 581 to organic solutions. Therefore, in order to reach the process of the present invention based on the teaching of WO 581, the skilled person would, first, need to decide to apply the process of WO 581 to a highly reactive class of compounds which are not even contemplated or suggested by WO 581. Secondly, the skilled person would then have to decide to employ an organic solvent system not contemplated or suggested by WO 581, and that does not permit the control of pH, completely ignoring the teaching of WO 581 concerning the importance of this feature. It is submitted that the skilled person would not contemplate taking these steps based on a fair reading of WO 581 and without the knowledge of the teaching of the present application. Accordingly, the applicants submit that the invention is not obvious from WO 581.

Favorable action with allowance of all claims, including new claims 10-14, is thought to be in order and is requested.

Respectfully submitted,

MORGAN LEWIS & BOCKIUS LLP

By 

Paul N. Kokulis
Reg. No. 16773

Date: June 25, 2009

Customer No. 09629

1111 Pennsylvania Avenue, N.W.
Washington, D.C. 20004
Phone: (202) 739-3000
Facsimile: (202) 739-3001
Direct: (202) 739-5455